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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,794	11/10/2008	Izumi Yamamoto	032213 R 044	2480
441 7590 10/27/2010 SMITH, GAMBRELL & RUSSELL 1130 CONNECTICUT AVENUE, N.W., SUITE 1130 WASHINGTON, DC 20036				
EXAMINER SAN MARTIN, JAYDI A				
ART UNIT		PAPER NUMBER		
2837				
MAIL DATE		DELIVERY MODE		
10/27/2010		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/588,794

**Applicant(s)**

YAMAMOTO, IZUMI

**Examiner**

J. SanMartin

**Art Unit**

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 8, 9, 11 and 12 is/are rejected.
- 7) ☒ Claim(s) 5 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 8/9/2006.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3, 6 and 8-9 are rejected under 35 U.S.C. 102(a) as being anticipated by Kikushima (JP 2004350015).

Regarding claim 1, Kikushima discloses a crystal resonator which has a base (51) and at least two tines (34, 35) extending from the base, wherein a groove (56) is formed on at least one of the front surface and the rear surface of the tine along the lengthwise direction of the tine, and a gap from at least one side surface of the tine to the groove is gradually increased toward the base. In figure 10, the width of the tines is widened toward the base portion of the resonator.

Regarding claim 3, the width of the groove is fixed through the whole length of the groove, while the width of the tine is gradually increased toward the base.

Regarding claim 6, Kikushima discloses an oscillator which has a base and at least two tines extending from the base, in which a groove (56) is formed on at least one of the front surface and the rear surface of the tine along the lengthwise direction of the tine, a groove electrode (63) is formed in the groove, and a side surface electrode (64/65) is formed on a side surface of the tine, wherein the width of the groove is fixed through the whole length of the groove, while the width of the tine is gradually increased toward the base.

Regarding claim 11, the tine and the groove formed in the tine are formed symmetric with respect to the centerline of the tine.

Regarding claim 12, the oscillator is formed with a tuning fork type crystal oscillating piece.

5. Claims 1, 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 7112915.

Regarding claim 1, Tanaya discloses a crystal resonator which has a base (140) and at least two tines (120, 130) extending from the base, wherein a groove (120a, 130a) is formed on at least one of the front surface and the rear surface of the tine along the lengthwise direction of the tine, and a gap from at least one side surface of the tine to the groove is gradually increased toward the base. In figure 3, the grooves 130a and 120a are narrowed close to the base portion.

6. Regarding claim 2, the width of the tine is fixed through the whole length of the tine, while the width of the groove is gradually reduced toward the base.
7. Regarding claim 4, Tanaya discloses an oscillator which has a base (140) and at least two tines (120, 130) extending from the base, in which a groove (120a, 130a) is formed on at least one of the front surface and the rear surface of the tine along the lengthwise direction of the tine, a groove electrode (120d, 130d) is formed in the groove, and a side surface electrode (141) is formed on a side surface of the tine, wherein the width of the tine is fixed through the whole length of the tine, while the width of the groove is gradually reduced toward the base, so that an arrangement area of a connecting electrode is formed.
8. Regarding claim 8, the tine and the groove formed in the tine are formed symmetric with respect to the center line of the tine.
9. Regarding claim 9, the oscillator is formed with a tuning fork type crystal oscillating piece.

***Allowable Subject Matter***

10. Claims 5 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The references of the Prior Art of Record fail to teach or suggest either alone or in obvious combination the limitations as set forth in claims 5 and 7, and specifically comprising the limitation of the width of the groove being linearly reduced.
11. Claim 10 is allowed.

12. The references of the Prior Art of Record fail to teach or suggest alone or in obvious combination, the limitations as set forth in claim 10, and specifically comprising the limitation of the width of the groove being linearly reduced.

*Conclusion*

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. San Martin whose telephone number is 571-272-2018. The examiner can normally be reached on M-Th 9-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Benson can be reached on 571-272-2227. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jaydi SanMartin/  
Primary Examiner  
Art Unit 2837

October 25, 2010